"I was greatly handicapped during our first year in this Copper Eskimo country by the lack of an interpreter. We had been able to secure the services of only one western native when we entered the region, the Mackenzie river youth Palaiyak. This boy had but the merest smattering of English, and moreover much of his time was inevitably taken up with miscellaneous duties around the station, such as hunting. During the seven months spent with the Copper Eskimos on Victoria island I had no interpreter at all. Conditions were much more favourable in the second year, for Dr. Anderson was able to engage a half-breed Eskimo boy named Patsy Klengenberg to help me in my work. Patsy could neither read nor write at first, but he had a fair conversational know- [11] ledge of English and had spoken Eskimo from his earliest years. Although barely sixteen years of age he was strong and hardy, an excellent traveller and a skilful and fearless hunter. Probably no better interpreter could have been found anywhere along the Arctic coast.

Most of my researches were carried out in the settlements of the Eskimos, for it was neither possible nor expedient to keep the natives around our station. Our party of six white men had to live in one small room, and whenever the Eskimos were introduced the house was so crowded that the staff had to retire to their bunks. That there was never the slightest friction, in spite of the inconveniences and discomforts to which they were subjected, was due entirely to their staunch comradeship and friendly co-

operation. They often put themselves to considerable trouble in order to obtain information for me, and, without their assistance, the present volume would have been far more imperfect and incomplete. Their help was not confined to the field, for since our return they have generously placed their photographs at my disposal for the illustration of my reports. I take this opportunity of thanking Dr. Anderson and my colleagues for all their assistance."

3: Rasmussen--15-16 (c. 1923) 1932 Copper Eskimo
116, 124

"Mr. Clark's offer to allow me to work in one of the Company's houses still held good, and so I made up my mind to go to Kent as soon as I had accustomed myself to their daily life as it is lived in their winter camps. I moved back to Kent already in the middle of December, taking with me those members of the tribe whom I had found would suit me best to work with. There is especial reason for [16] mentioning an old shamàn by the name of Hêq: 'arctic willow', who was an expert of outstanding merit in mystic matters; his son Tatilgaq: 'the crane" and his wife Hikhik: 'the marmot' told me all I wanted to know about the men's hunting implements and methods and about all the work that in each house falls to the lot of the women. A young man of the name of Netsit: 'the seal', no more than twenty years old, proved to be their best storyteller, for he had been the foster child of a famous old shaman. With these five people I worked from morning till evening until I was compelled to break camp again to go further westwards. And the insight they gave me me [sic] of the spiritual and material life of the tribe was exceedingly interesting."

3: Rasmussen--21-22 (c. 1923) 1932 Copper Eskimo
116, 115, 124

"Talks with Shamans.

My familiarity with the habits and customs of other Eskimo groups always quickly brought me into contact with the wise men of the villages; and there, as in all other cases, it was always the shamans. As regards the Umingmaktôrmiut I devoted myself especially to Hêq and his son Tatilgak; the old man was, I should say, sixty to sixty-five years old, and his son about twenty years younger. They were [22] both hunters of high standing, and their authority within the group was great. As a rule our talks went on in the presence of Netsit who, despite his 25 years, knew a great deal about beliefs and traditions; the explanation of this was that he had been brought up by an old shaman, Ilatsiaq, who up to his death had instructed his foster son 'in that which was hidden to the eyes of others.'

The information I secured from these three men has been drawn together in the following, although in all essentials their own expressions are rendered in their original form. In order to avoid unnecessary repetitions of what has already been recorded from the Iglulingmiut, Pâtlermiut and Netsilingmiut, I have included only what is characteristic of the Umingmaktôrmiut, ignoring matters that are common to them all and in any case of a more general nature."

27:Chown & Lewis 3-5 (1958)1959
ND8 Copper Eskimo ND8

[P 13, B]

The Blood Group Genes of the Copper Eskimo[1]

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or child may have been spared and incorporated into the population.

As to the other admixtures there was only a rare contact between Eskimo and people other than Indian from 1771 until about 40 years ago. These were not whaling waters. A few explorers and trades entered the area, some of whom married Eskimo women. These events are so recent that children of these marriages are still living, a number of whom we tested. Today there are two small white settlements, that at Cambridge Bay and that at Coppermine, and several still smaller implants.

In the present study 330 out of the total of approximately 1000 were tested. With the help of Corporal and Mrs. D. McDougal of the R.C.M.P., Father LaPointe, O. M. and the Reverend Canon Sperry a detailed genealogy was drawn up. There were no first-cousin marriages.[3] The genealogy could not be carried far enough back to prove or disprove second-cousin marriages. Of the 330, only 10 could be proved to have white ancestors; these 10 were eliminated in gene frequency analysis. Such analysis was carried out for the remaining total 320 and for 46 among them who were apparently unrelated. While there is no significant difference between the two estimates, we think analysis based on the 320 is probably more accurate since phenotypes of low frequency were then represented. The estimates in the tables are so based. There is a high death rate in young adults, so it was unusual to obtain blood from children and both parents. Few genotypes could therefore be defined but in what family data we did obtain, there was no disagreement between expected phenotypes and those found.

[1] Assisted by a grant from the National Museum of Canada. Dr. Jacques Rousseau, Director.
[2] Postal address, 735 Notre Dame Ave., Winnipeg 3, Man., Canada.
[3] See addendum.

[P.17,B]

may well be in the present Eskimo population a Dorset residuum which is genetically recognizable. It is hardly to be expected that such recognition will depend upon the presence of a strange gene in one population that is absent from the other, but rather upon differences of frequencies of genes already known or to be discovered, differences such as are indicated in the above data. One can as yet draw no firm conclusions, but certainly the indications are enough to make further genetic studies, even more complete than the present one, worth-while.

SUMMARY

Blood group gene frequencies were determined based on samples from 320 Copper Eskimo as follows: *O*, 0.6770; *A*, 0.2914; *B*, 0.0316; *M*, 0.8422; *N*, 0.1578; *S*, 0.1827; *s*, 0.8173; *MS*, 0.1719; *Ms*, 0.6703, *NS*, 0.0000, *Ns*, 0.1578; P_1, 0.1842, P_2, 0.8158; *CDe*(±*Cde*), 0.4985; *cDE*(±*cdE*), 0.4906; *cDe*(±*cde*), 0.0109; Fy^a, 0.7500; Fy^b, 0.2500. The following phenotypes were found to have a frequency of 1.00; Lu (a − b +), K − k + Kp(a − b +), Le(a−) and Sec. The following antigens were not present in the population tested: He, M^g, Mi^a, Vw, C^w, V, Di^a, Be^a, By^a, and Wr^a. Differences between this population and other Eskimo populations studied were noted in the ABO, MNSs and Duffy systems.

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ADDENDUM

Since this article was written we have obtained additional genealogical information from Mr. Wm. Joss, Manager of the

[R 18, A]

124 582 Hudson's Bay Company post at Reid Island, who obtained much of it from Ageak, an Eskimo of some 70 or more years. Four out of 60 matings in the most recent major mating generation were between first cousins. We are deeply indebted to Mr. Joss and to Ageak for the great care with which they went into this question for us.

LITERATURE CITED

113 Chown, B., and M. Lewis 1951 The slanted capillary method of Rhesus blood grouping. J. Clin. Path., 4: 464–468.

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

some friends in British Columbia, and felt our isolation slip away for a few hours as we joined with the rest of the Christian world in common festival.

Our enlarged party now required more accommodation, so the store became a kitchen fitted with bunks for Castel and Cockney. The two western Eskimos, Palaiyak and Ikey, slept in a tent surrounded by snow-walls covered with a tarpaulin roof. The house itself was reserved for the six members of the scientific staff. That, at least, was our intention; but unfortunately the natives around us were too civilized to read the notice on the door, and inundated our hut as frequently as before.

Christmas ended, I returned to my Eskimos at Putulik, in the Liston and Sutton Islands, taking Palaiyak as assistant and interpreter. The natives whom I had visited on Victoria Island had also gathered there, so that the settlement now consisted of some thirty families living in twenty-five snow-huts. We erected our tent right in their midst, and built a snow-hut over it, both for warmth and for extra storage-room between the two walls. Not wishing to violate any of their customs concerning the sharing of food, we entertained two or three visitors at every meal, and distributed the scraps among the crowd at the door. Trading and visiting among the houses occupied most of the day-time; but after the hunters returned from their sealing we attended the celebra-

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

123
437 tions in the dance-house, or gathered the elder men
124 inside our tent and enquired into their customs and beliefs.

802 Compared with the Eskimos of Alaska, these natives were astonishingly primitive. Their language contained no word for any number beyond six. I induced a woman to count on her fingers, and she began, in her own tongue, "one, two, one." I corrected her, and she started again, "one, two, three." There she stopped, and a man standing beside her said "four." Both had forgotten the words for the next two numbers, considering everything above four as many. Yet they were not so primitive as to be easily short-changed in any transaction, for they could separate a pile of articles into groups of three or four and count them with tolerable accuracy. A man to whom I gave only nineteen cartridges instead of twenty fitted them into an empty box, discovered the error, and indignantly demanded the missing round.

125 These people lacked, too, the artistic skill for which
532 their kinsmen in other places are famous. I distributed pencils and paper to several adults, both men and women, and asked them to draw sketches of people, houses, caribou, and anything else they cared to attempt. The results were amusing, similar to what we should expect from a child of six. Even my chart
[823] they were unable to follow. One man, more intelligent than the rest, seemed to grasp that a certain

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

Among half a dozen Eskimos from the Mackenzie River delta engaged to help the expedition I recognized only the half-breed, Patsy Klengenberg, who was to be my interpreter throughout the winter.

Even the house was altered. The cache that had adjoined our single room was now transformed into a kitchen, and fitted with bunks to accommodate the cook and some of the Eskimos. It was also the dining-room, the scientists reserving the main room as a study and bedroom. The engineer installed a carbide lighting plant before Christmas to replace the kerosene lamps; and with good illumination, ample work-tables beneath the windows and rows of books above, our home seemed strangely luxurious after the simplicity of the native snow-huts. The temptation to remain there and vegetate for a time was overwhelming.

Anderson's party appeared the day after my return, and Girling left three days later to rejoin his schooner to the west. In the peace and comfort of our hut we settled down to examine our letters, and to read the sheafs of newspapers brought in from Herschel Island during the summer. April, 1914, had been the date on the last letters we had received from the outside world, and until this month of November, 1915, no rumours, not even of the Great War, had penetrated to our lonely outpost. The new mail sketched its history for nine months only, up to the beginning of May; and we held several midnight sessions speculating on

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

Eskimos from both sides of the strait, and from the Coppermine River area, flocked to the station to trade before the opening of the sealing season, until their new-born village on the edge of the ice contained nearly a hundred and fifty inhabitants. They remained with us for three weeks, giving no trouble, although we excluded all but Ikpuck's family from the house until nightfall. I tried, with Patsy's assistance, to delve into their religion and to record their ancient traditions; but privacy was impossible and fear of public disapproval sealed their lips. They spent their days in trading with me, or in visiting each other's huts and holding impromptu dances; then, after the white men had put away their note-books and retired to read in their bunks, they gathered around my phonograph and filled the house with song. Although the love of music is inborn, not taught, I had hoped that the sweetness of their voices would kindle an æsthetic glow in the cold, scientific breasts of my companions. But Cox leaped violently from his bed one midnight, and with neither sympathy nor ceremony expelled the belated choristers into the outer darkness.

All the chants they sang for me were either dance-songs or incantations to create fine weather. I asked them for lullabies; they responded with more dance-songs. The mother who rocked her baby to sleep on her back, under the warm fur coat, crooned the same melodies that she shouted in the dance-house to the booming of the drum.

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

"Perhaps."

"You can use it for dog-food, you know."

"Yes." And I continued on.

"By the way, I'm Big-Tooth, you know."

"Yes, Big-Tooth."

"By the way—". But I pretended not to hear him and hurried to overtake Patsy. Big-Tooth was a good fellow and deservedly popular; yet even his countrymen, whose own minds moved in constant circles round the material present, took to flight whenever he joined in a conversation.

On reaching the islands we erected a tent inside an unusually large snow-hut that opened into Ikpuck's dwelling. This was an admirable arrangement for two reasons; the hut gave us shelter from the wind, and the tent made it possible to set up a stove where we could burn some of the driftwood that lined the western beaches of the island. Here, with more privacy, we made another attempt to investigate the mythology and religion of the people. Ikpuck and Icehouse gladly told us all they knew, and though not well versed in the traditional lore of their people, they could direct us to better informants. We then closeted ourselves with two old men, whose hearts we warmed with some hard biscuits and cups of steaming chocolate. The comfortable tent and the unusual beverage loosened their tongues, and when one man

29: Jenness E-5 (1914-1916) 1959
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lifted the veil of secrecy a few inches the other raised it higher, lest silence should rob him of a share in the reward. In the end it was not their secretiveness that hampered our researches, but our ignorance of their ways of thought and their own inability to narrate a story from the ground upward; for they invariably began with the crisis, so to speak, and worked backward and forward, with many omissions and repetitions, on the tacit assumption that our minds moved in the same groove as theirs and that explanations were needless.

If the preceding winter had been unusually mild, this one was unusually stormy. Gales from east and west—the two prevailing quarters—swept the shelterless ice-field day after day until its covering of snow grew hard like a macadamized road. Then the wind blew narrow furrows along it, *sulci* with crests so sharp that they hurt the feet. Hunters who ventured out to seal could find no breathing-holes amid the driving snow, and with difficulty reached their homes again. The first gales passed unheeded. The people had fish and caribou meat stored outside their huts, and pokes of blubber for their lamps. Gathered inside the dance-house, they could laugh at the howling blizzards and while away the hours in song and gymnastics. But when their food was exhausted, when half their lamps had expired from want of oil, dance-songs

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123 789 that the dogs had dragged it away in the darkness and the drifting snow had concealed it from sight. The distracted owner came to me: Could I not find it was the magic needle that spun round and round when I placed my knife beneath it, but at rest always pointed in the same direction? I listened to his story attentively, and promised that he should recover the
• [124] rifle before many days. That same evening I was visited by Knife, who also owned a .44 Winchester rifle, which I had agreed to replace with a more powerful 30.30 if he taught me the lore of his people. After mentioning Fish-Head's misfortune, I said: "You must be able to find his weapon, for you are the greatest medicine-man in this country. See that it is given back to him, for until it is found I can neither change your own rifle nor trade with any of your people." He protested vehemently against such an impossible task, and when I would not relent, departed in ill-humour. Nothing happened for two days; Knife kept aloof from me, and I abstained from all trade. Then one stormy morning an excited crowd broke into my tent, led by the triumphant Fish-Head. The rifle was found. Knife, the great medicine-man, had discovered it. He had gone out to shoot a raven that haunted the settlement, although the people had never thought of harming it before, and had come upon the rifle half buried in the snow. Knife himself stood